so-called trade wind dusts which blow from Africa over the Atlantic Ocean. The total quantity of the dust that fell on March 11 averaged 260 grams to 1,400 square meters in Fiume.

The effect of this dust floating in the atmosphere was to produce a reddish haze and to diminish the amount of insolation at the earth's surface thereby doubtless increasing the temperature of the air in the upper strata. The general color of the dust when dry and collected in quantity is a bright reddish brown; a sample of it presented by Monsieur Barac is deposited in the Library of the Weather Bureau.

THE MILWAUKEE, WIS., CONVENTION OF WEATHER BUREAU OFFICIALS.

At the conclusion of the Milwaukee Convention we are filled with the conviction that the triennial convention has come to stay. This was the second general convention preceded by seven or eight meetings of the more restricted character, and has demonstrated beyond all peradventure that nothing gives such a stimulus to development of new ideas, the removal of doubts and troubles, the incentive to better work; nothing so firmly cements the bonds of friendship or the highest esprit du corps as these few days of personal intercourse between the Chief and his representatives throughout the country. In a few remarks made by our distinguished Voluntary Observer Rev. Father Odenbach, S. J., of Cleveland, Ohio, he expressed with great earnestness the impression made upon himself by his intercourse with those present by saying that he was convinced that so far as he knew there was but one other organization in the world, namely, that to which he himself had the honor of belonging, that could compare with the Weather Bureau in intelligence, discipline, and devotion. To his mind there could be no doubt of continued success, and the final overcoming of every difficulty, scientific and practical, so long as we maintain our present high standard in these three directions.

Nothing could exceed the perfection and convenience of the arrangements made to accommodate the convention and facilitate work, and as for the hospitality and the entertainment that were offered to the members and their wives when their time was not occupied in the work incident to the meeting, it was both elegant and lavish.

On the opening day of the session a clear sky and an easterly wind set forth to perfection the beauty of Milwaukee and the adjacent lake. From the windows of the Convention Hall, as one listened to the speakers, the eye was frequently tempted to glance through the banquet hall of the Hotel Pfister and rest upon the sparkling sapphire of the distant water. We hope that at some time or other every official of the Weather Bureau may have the opportunity to feast upon the beauties of Milwaukee and her lake.

As every thing that was said and done has been fully recorded by the skillful pen of Mr. R. M. Reese, and will be published in Mr. Berry's final report, it will be unnecessary for the Editor at the present time to dwell upon the details of the meeting. Every one expresses delight at the strong stand taken by the Chief in his opening address and subsequent remarks in favor of increased attention to special scientific work, more profound investigations, more perfect meteorological laboratory, more thorough instructions in preliminary physics and mechanics. The papers read by Professors Bigelow and McAdie, and by Messrs. Fulton, Schultz, Glass, and Fassig gave a special pleasure in their support of the urgent need of higher scientific work, whose importance was insisted on by every member of the convention. There appeared to be a wide diversity of opinion as to whether meteorology should be introduced as a special study into the public schools, owing to the present crowded condition of the curriculum, but there was no doubt but that the lower grades of public schools really demanded the study of the clouds, the weather, the thermometer, and other simple matters as being appropriate branches of the so-called study of nature. These are items of knowledge that should be familiar to every citizen, and they are items picked up by the children very easily without adding a moment to the time devoted to the study of books. They are taught as object lessons by what may be called kindergarten methods. The advantages to be derived from giving systematic popular lectures to farmers' institutes and other such gatherings were specially dwelt upon by Messrs. J. Warren Smith, E. W. McGann, and J. S. Hazen. Of course to be a good lecturer one must have a clear voice and distinct utterance or articulation, and those who give the most attention to vocal culture will undoubtedly succeed best as lecturers and represent the Bureau most efficiently for the public. Problems of climate in its connection with diseases, vegetation, and all forms of animal life were presented by a number of papers, and the general impression left upon the audience was that, notwithstanding their complexity these must eventually yield to the persevering studies of well trained specialists. Under the heading of Forecasts, ten minutes was especially assigned to Mr. Harvey M. Watts, of the Philadelphia Press, who gave us a most valuable and stirring address on the many points in reference to which improvements can be made in the work of the Bureau and its relations to the daily press. The address was marked by all of the energy, incisiveness, and earnestness of which Mr. Watts is such a master, and was received with unbounded applause and a hearty vote of thanks from every member.

There was not as much time to give to the general discussion as was universally desired, and, as this want of time is likely to be always a hindrance, the Editor heard several state that it might be better to have it known beforehand that initial ten minute papers, followed by one or two well prepared five minute papers, would be expected to cover the subject. But, undoubtedly, the majority desire a freer voluntary discussion, and many expressed the sentiment that the second and third prepared papers could be omitted, and that the whole subject covered by any initial paper should be immediately thrown open to general discussion to be followed in each case by a vote expressive of the general opinion of the convention on the merits of the question.

The seventh section, or the session of August 29, was occupied by remarks from numerous representatives of extensive mercantile interests. Of these the Editor was most deeply impressed by the address of Mr. A. W. Machen of the United States Postoffice Department in charge of the rural free delivery service. Mr. Machen's graphic picture of the inception and rapid growth of that service was quite fascinating. It lies, of course, with the Secretary of Agriculture and the Chief of the Weather Bureau to utilize this new service to the fullest extent in the spread of the morning weather forecast among the rural population. However, it appears that we have not been able to keep up with its rapid growth, and that a large increase in our annual appropriation will be necessary if we make full use of these new opportunities.

The convention regretted very much the absence of Mr. John W. Smith, of Boston, J. R. Sage, of Des Moines, and Prof. R. F. Stupart, of Toronto, but was gratified to listen to Mr. H. H. Clayton, representing the Blue Hill Observatory. It was also especially favored by the presence of the Secretary of Agriculture, whose every word inspired us anew with that devotion to agricultural interests that actuates his every thought and act.

A lively interest was shown in the revelations brought out

by Dr. O. L. Fassig in his paper on the daily barometric wave.

A very successful photograph of the members of the convention was taken on Thursday, noon, copies of which, on the scale of 17 by 11, can be had for $1.25 by applying to Mr. W. M. Wilson, Section Director, Milwaukee, Wis. We take pleasure in adding to our illustrations of the current number of the REVIEW a reduced print of this interesting picture, Plate I.

WEATHER BUREAU MEN AS INSTRUCTORS.

Mr. John R. Weeks, Observer, Weather Bureau, addressed the State Convention of Cotton Growers that met at Macon, Ga., on July 12. Upon his invitation, many of the delegates visited the local Weather Bureau office for the purpose of familiarizing themselves with the general work of the National Weather Bureau.

CORRIGENDA.

MONTHLY WEATHER REVIEW for June, 1901, make the following corrections:

On page 253, column 2, line 6 from bottom, for "following" read "preceding."

On page 253, column 2, line 7 from bottom, for "division is" read "divisions are."

On page 257, column 1, note at bottom of table, omit "the sea."

On page 263, column 2, line 29, for "marked" read "masked."

On page 265, column 2, line 16 from bottom, for "lunistice" read "lunisticii."

On page 268, column 1, line 29 from bottom, for "one-fifth per cent" read "1.5 per cent."

On page 268, column 2, line 5 from bottom, for "five thousand million" read "twenty-five thousand million."

THE WEATHER OF THE MONTH.

By P. C. DAY, Acting Chief Division Meteorological Records.

CHARACTERISTICS OF THE WEATHER FOR JULY.

The one overshadowing feature of the weather for the month was the long and practically unbroken period of intense heat and drought that prevailed during the month over the great central valleys of the country.

The blighting effect of the merciless rays of the sun day after day, supplemented by an almost entire absence of rainfall, threatened the great agricultural regions with ruin so widespread and disastrous as to be scarcely estimated.

Rains and cooler weather the last few days of the month, however, materially changed the outlook and modified to some extent the effects of the most widespread and disastrous hot wave and drought in the history of the country.

PRESSURE.

The distribution of monthly mean pressure is graphically shown on Chart IV and the numerical values are given in Tables I and VI.

Pressure conditions did not differ materially from the normal, except that the permanent area of low pressure over the plateau and plains region was somewhat intensified and extended eastward considerably beyond its normal boundaries. The areas of high and low pressure that moved across the country were generally ill-defined and lacking in energy, in fact, a notable feature of the month was the inconsequential barometric changes from day to day and the resulting stagnation of the lower strata of the atmosphere. Compared with the normal, pressure for July was slightly in excess over a narrow strip along the immediate Atlantic coast from Florida to the Maritime Provinces of Canada and along the extreme northern edge of the Great Lakes. Over the remainder of the country pressure was below the average, attaining a maximum departure below of from 0.10 to 0.15 inch over the Great Basin and Plains region.

Over the region extending from the Rocky Mountains westward to the Pacific and from the lower lakes eastward and southeastward to the Atlantic coast, the pressure for July was generally lower than for the previous month. Over the valleys of the Mississippi and Missouri, the southern Plateau region and the upper lakes pressure was slightly in excess of that for June.

TEMPERATURE OF THE AIR.

The distribution of monthly mean surface temperature, as deduced from the records of about 1,000 stations, is shown on Chart VI.

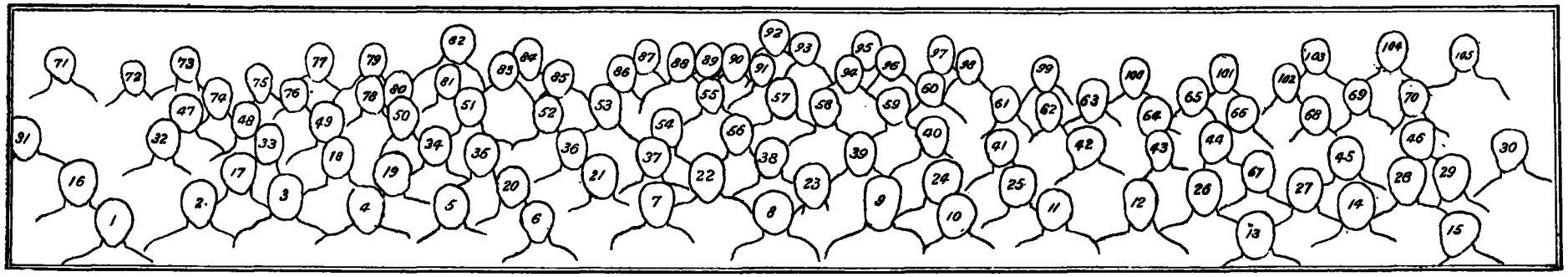
The hot wave of July, 1901, over the central valleys, embracing the great corn belt of the United States, had its inception in the latter part of June and continued with scarcely a break till about the 27th of July, making a record of continuous heat that will probably be the standard for future years. During this period the sky was practically free from clouds, and day after day the unobstructed rays of the sun were poured upon the parched and sun-dried earth.

Even the nights afforded little relief, for while the absence of clouds ordinarily favors radiation of heat from the earth at night, normal conditions appeared to be totally suspended and the air retained its heat during the nights in a manner that appeared remarkable.

Throughout portions of Missouri and eastern Kansas and Nebraska the daily maximum temperature averaged 100° or more from the 25th of June to the end of July. At Beaver City, Nebr., from June 23 to July 31, inclusive, the maximum temperature averaged 104°, and only on three days during the entire period of thirty-nine days, did the maximum temperature fall below 100°. At Columbia, Mo., from June 22 to July 25, inclusive, a period of 34 days, the maximum temperature averaged over 100°, records probably unsurpassed in the history of the country, except in the desert portions of southern California and Arizona. Throughout all the great corn-growing States of the central-west all previous records, both of the monthly means and maximum temperature were exceeded, and yet a surprising feature of the crop conditions at the end of the month was that so large a proportion of the unmatured crops had stood the fiery ordeal so long without more material injury.

Compared with the normal, the temperature for July was everywhere in excess, except a narrow strip along the Pacific coast and over limited areas of eastern Georgia and the Florida Peninsula. Over all the region from the Appalachian to

Key to Plate I, Monthly Weather Review, July, 1901.



1 Mr. E. A. Evans, Richmond.
2 Mr. A. F. Sims, Albany.
3 Mr. T. F. Townsend, Philadelphia.
4 Mr. J. H. Robinson, Washington.
5 Mr. L. M. Pindell, Chattanooga.
6 Mr. O. D. Stewart, Grand Junction.
7 Prof. F. H. Bigelow, Washington.
8 Prof. Willis L. Moore, Washington.
9 Hon. James Wilson, Washington.
10 Prof. Cleveland Abbe, Washington.
11 Prof. C. F. Marvin, Washington.
12 Mr. W. T. Blythe, Indianapolis.
*13 Mr. A. W. Machen, Washington.
14 Dr. W. F. R. Phillips, Washington.
*15 Mr. La Verne W. Noyes, Chicago.
16 Mr. H. R. Patrick, Marquette.
17 Mr. J. S. Hazen, Springfield, Mo.
18 Mr. D. H. Carr, Milwaukee.
19 Mr. F. H. Brandenburg, Denver.
20 Mr. W. U. Simons, Key West.
21 Mr. R. M. Hardinge, Santa Fe.
22 Prof. H. J. Cox, Chicago.
23 Prof. A. J. Henry, Washington.
24 Prof. A. G. McAdie, San Francisco.
25 Prof. E. B. Garriott, Washington.
26 Mr. E. B. Calvert, Washington.
27 Mr. T. B. Jennings, Topeka.
28 Mr. E. W. McGann, New Brunswick.
29 Mr. James Kenealy, Cleveland.
*30 Rev. F. L. Odenbach, S. J., Cleveland.
31 Mr. J. H. Smith, Carson City.
32 Mr. E. H. Emery, New York.
33 Mr. L. S. Mosby, Ithaca.
34 Mr. W. S. Belden, Vicksburg.
35 Mr. H. E. Williams, Washington.
36 Mr. T. S. Outram, Minneapolis.
37 Mr. H. B. Boyer, Savannah.
38 Mr. L. M. Tarr, New Haven.
39 Mr. E. B. Richards, Little Rock.
40 Dr. I. M. Cline, New Orleans.
41 Mr. G. H. Noyes, Boston.
42 Mr. H. C. Bate, Nashville.
43 Mr. F. P. Chaffee, Montgomery.
44 Mr. P. H. Smyth, Cairo.
45 Mr. James Berry, Washington.
46 Dr. R. J. Hyatt, St. Louis.
47 Mr. A. B. Wollaber, Portland, Oreg.
48 Mr. A. McC. Ashley, Washington.
49 Mr. L. H. Murdoch, Salt Lake City.
50 Mr. L. G. Schultz, Fort Worth.
51 Mr. J. M. Sherrier, Davenport.
52 Mr. C. E. Linney, Chicago.
53 Mr. P. F. Lyons, St. Paul.
54 Mr. W. S. Palmer, Cheyenne.
55 Mr. O. W. Roberts, Yankton.
56 Mr. G. N. Salisbury, Seattle.
57 Mr. Al. Brand, Atlantic City.
58 Mr. M. E. Blystone, Springfield, Ill.
59 Mr. J. L. Cline, Sandusky.
60 Mr. E. H. Bowie, Galveston.
61 Dr. O. L. Fassig, Baltimore.
62 Mr. R. H. Dean, La Crosse.
63 Mr. E. J. Glass, Helena.
64 Mr. H. B. Hersey, Louisville.
65 Mr. B. L. Waldron, Columbus.
66 Mr. C. M. Strong, Oklahoma.
67 Mr. H. W. Richardson, Duluth.
68 Mr. B. H. Bronson, Bismarck.
69 Mr. S. C. Emery, Memphis.
70 Mr. L. A. Denson, Meridian.
71 Mr. W. S. Currier, Toledo.
72 Mr. E. P. Jones, Portland, Me.
73 Mr. L. N. Jesunofsky, Charleston.
74 Mr. A. E. Hacket, Columbia, Mo.
75 Mr. J. W. Bauer, Columbia, S. C.
76 Mr. R. B. Harkness, Houghton.
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78 Mr. E. C. Easton, Baltimore.
79 Mr. W. M. Fulton, Knoxville.
80 Mr. R. M. Reese, Washington.
*81 Mr. H. M. Watts, Philadelphia.
*82 Mr. E. R. Sharwood, Philadelphia.
83 Mr. George Reeder, Corpus Christi.
*84 Mr. C. B. Murray, Cincinnati.
85 Mr. C. F. Schneider, Lansing.
86 Mr. U. G. Purssell, Sioux City.
*87 Mr. B. W. Snow, Chicago.
88 Dr. W. M. Wilson, Milwaukee.
89 Mr. S. W. Glenn, Huron.
90 Mr. G. A. Loveland, Lincoln.
91 Mr. G. B. Oberholzer, Charlotte.
92 Mr. L. A. Welsh, Omaha.
93 Mr. J. B. Marbury, Atlanta.
94 Mr. F. M. Cleaver, Washington.
95 Mr. N. B. Conger, Detroit.
96 Mr. D. Cuthbertson, Buffalo.
97 Mr. G. T. Todd, Dodge.
98 Mr. M. W. Hayes, Havana.
99 Mr. G. E. Franklin, Los Angeles.
100 Mr. F. W. Conrad, Green Bay.
101 Mr. J. Warren Smith, Columbus.
102 Mr. P. Connor, Kansas City.
103 Mr. W. M. Dudley, Mobile.
104 Mr. S. M. Blandford, Boise.
105 Mr. A. J. Mitchell, Jacksonville.

*Visitors to the Convention.

The Weather Bureau Officials at Milwaukee, Wis., August 29, 1901.